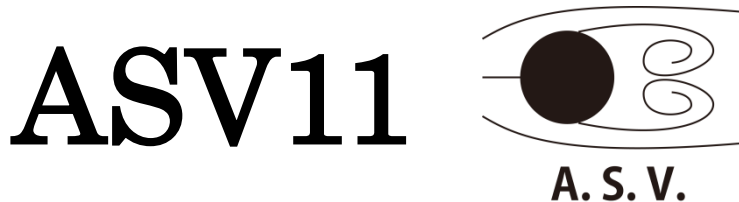


# Program and Abstracts



## The 11th Asian Symposium on Visualization

June 5–9, 2011

Toki Messe (Niigata Convention Center), Niigata, Japan

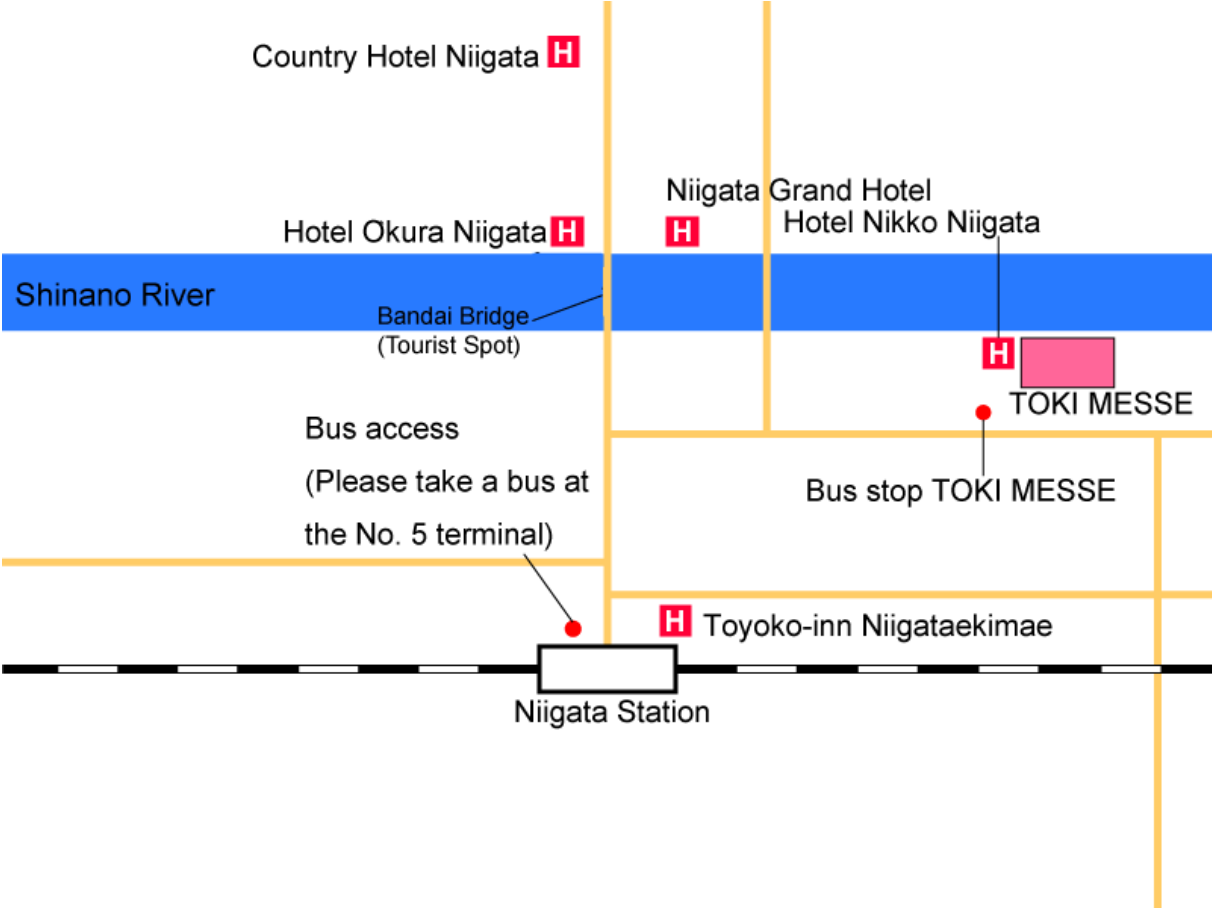
Organized by    The Visualization Society of Japan  
                    The Visualization Research Center, Niigata University

Co-organized by Architectural Institute of Japan  
                    Combustion Society of Japan  
                    Japan Society of Civil Engineers  
                    Japan Society of Maintenology  
                    Society of Automotive Engineers of Japan  
                    The Japan Society for Aeronautical and Space Sciences  
                    The Japan Society of Fluid Mechanics  
                    The Japan Society of Mechanical Engineers  
                    The Japanese Society for Multiphase Flow  
                    The Society of Instrument and Control Engineers  
                    Turbomachinery Society of Japan

# The 11th Asian Symposium on Visualization

## Venue

Toki Messe (Niigata Convention Center)  
<http://www.tokimesse.com/english/>  
Bandaijima 6-1, Chuo-ku, Niigata, Niigata, 950-0078, Japan



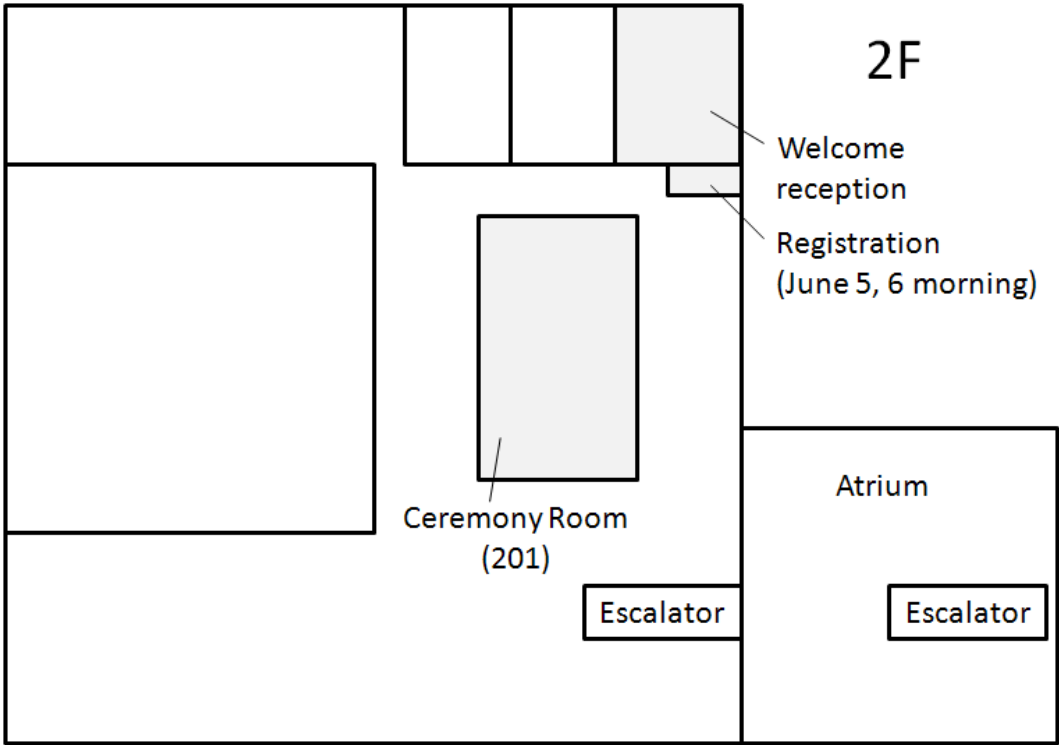
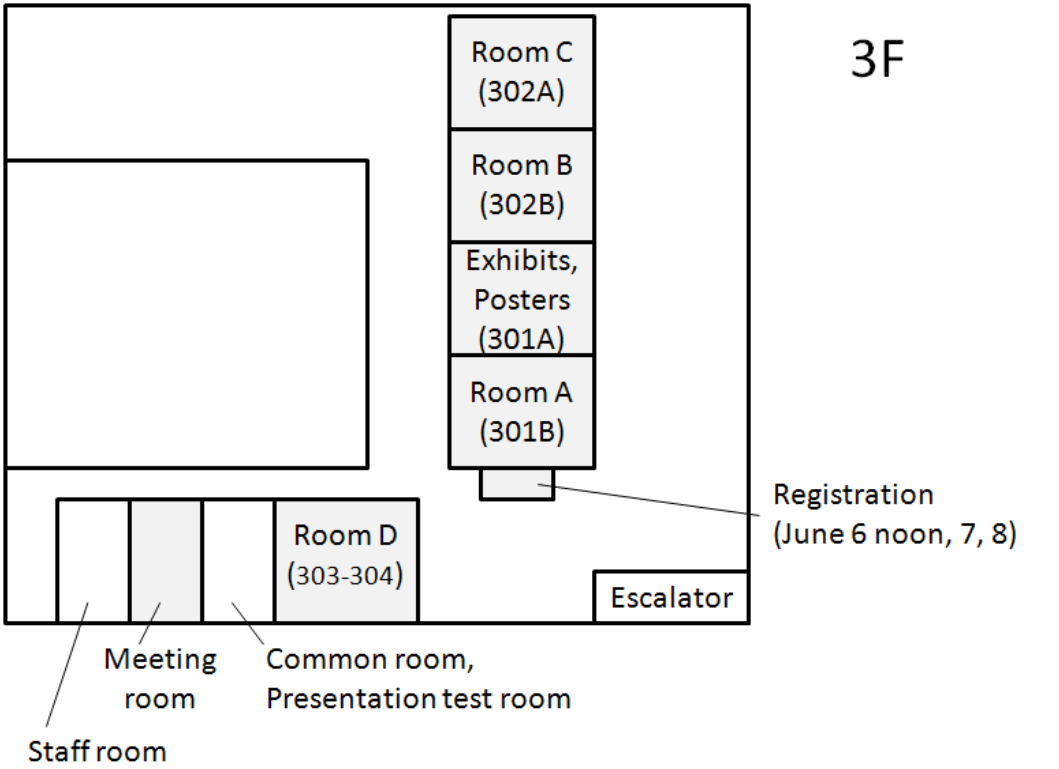
From Niigata Airport  
By taxi  
Approx. 20 min.

From Niigata Station  
By bus  
Approx. 10 min.

By taxi  
Approx. 5 min.

On foot  
Approx. 20 min.

Layout of Rooms (Toki Messe)



# The 11th Asian Symposium on Visualization Schedule

## Organized Sessions

OS01: Combustion Phenomena and Engine  
 OS02: Optical Measurement  
 OS03: Multiphase Flow  
 OS04: Heat Transfer and Turbulent Flow  
 OS05: Civil and Coastal Engineering  
 OS07: Scientific Art, Sports Science and Numerical Visualization  
 OS08: Visual Information and Analysis  
 OS09: Bio Fluid and Life Science

OS10: Nano and Micro Fluid  
 OS11: Aeronautics and High Speed Flow  
 OS12: Acoustics and Industrial Aerodynamics  
 OS13: Safety Management Technology  
 OS14: Turbomachinery  
 OS15: Shock Wave and Plasma Aerodynamics  
 OS16: Fluid Control and Measurement  
 OS99: General Topics of Visualization

## Sunday (June 5)

	<b>Toki Messe</b>
<b>16:00 PM – 18:00 PM</b>	<b>Registration &amp; Welcome Reception (snacks and drinks)</b>

## Monday (June 6)

<b>8:30 AM –</b>	<b>Registration</b>			
	<b>Ceremony Room</b>			
<b>9:20 AM – 9:50 AM</b>	<b>Opening Ceremony</b>			
<b>9:50 AM – 10:45 AM</b>	<b>Plenary Lecture, Jurgen Kompenhans</b>			
<b>10:45 AM – 11:40 AM</b>	<b>Plenary Lecture, Toshio Kobayashi</b>			
<b>11:40 AM – 13:00 PM</b>	<b>Lunch</b>			
	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>	<b>Room D</b>
<b>13:00 PM – 14:30 PM</b>	<b>OS8</b>	<b>OS99</b>	<b>OS15</b>	<b>OS4</b>
<b>14:30 PM – 14:50 PM</b>	<b>Coffee Break</b>			
<b>14:50 PM – 16:20 PM</b>	<b>OS8</b>	<b>OS9</b>	<b>OS15</b>	<b>OS4</b>
<b>16:30 PM – 17:45 PM</b>	<b>OS8</b>	<b>OS9</b>	<b>OS99</b>	<b>OS99</b>
<b>18:30 PM – 20:30 PM</b>	<b>Welcome Party (buffet dinner), Niigata Grand Hotel</b>			

## Tuesday (June 7)

	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>	<b>Room D</b>
<b>9:00 AM – 10:00 AM</b>	Keynote lecture, Jiun-Jih Miao	Keynote Lecture, Koichi Hishida		
	Keynote lecture, S.J. Lee	Keynote Lecture, S.H. Chung		
<b>10:00 AM – 10:20 AM</b>	<b>Coffee Break</b>			
<b>10:20 AM – 12:05 PM</b>	<b>OS2</b>	<b>OS3</b>	<b>OS99</b>	<b>OS16</b>
<b>12:05 PM – 13:25 PM</b>	<b>Lunch</b>			
<b>13:25 PM – 14:25 PM</b>	<b>Short Presentation</b>	<b>Short Presentation</b>		
<b>14:25 PM – 15:20 PM</b>	<b>Poster Session &amp; Coffee Break, the "Exhibits, Posters" room</b>			
<b>15:20 PM – 16:35 PM</b>	<b>OS14</b>	<b>OS10</b>	<b>OS99</b>	<b>OS16</b>
<b>16:45 PM – 17:45 PM</b>	<b>OS14</b>	<b>OS10</b>	<b>OS99</b>	
	<b>Meeting Room</b>			
<b>16:45 PM – 17:45 PM</b>	<b>ISC Meeting</b>			
<b>18:30 PM – 20:30 PM</b>	<b>ASV11 Committee and Organizers Meeting, Hotel Okura</b>			

## Wednesday (June 8)

	<b>Room A</b>	<b>Room B</b>	<b>Room C</b>	<b>Room D</b>
<b>9:00 AM – 10:00 AM</b>	Keynote lecture, S. Leonov	Keynote Lecture, E. Rathakrishnan		
	Keynote lecture, J.J. Wang	Keynote Lecture, Yasuki Nakayama		
<b>10:00 AM – 10:20 AM</b>	<b>Coffee Break</b>			
<b>10:20 AM – 12:05 PM</b>	<b>OS11</b>	<b>OS99</b>	<b>OS12</b>	<b>OS99</b>
<b>12:05 PM – 13:25 PM</b>	<b>Lunch</b>			
<b>13:25 PM – 14:55 PM</b>	<b>OS11</b>	<b>OS1</b>	<b>OS7</b>	<b>OS5</b>
<b>14:55 PM – 15:15 PM</b>	<b>Coffee Break</b>			
<b>15:15 PM – 16:15 PM</b>	<b>OS11</b>	<b>OS1</b>	<b>OS7</b>	<b>OS5</b>
<b>16:25 PM – 17:25 PM</b>	<b>OS13</b>	<b>OS99</b>	<b>OS7</b>	<b>OS5</b>
<b>18:00 PM – 21:00 PM</b>	<b>Award Ceremony and Banquet, Hotel Nikko</b>			

## Thursday (June 9)

<b>8:30 AM – 13:00 PM</b>	<b>Technical Bus Tour Niigata Prefectural Museum of History</b>
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# The 11th Asian Symposium on Visualization

## Technical Program

June 6

### Ceremony Room

Opening Ceremony

9:20am-9:50am

Plenary Lecture

9:50am-11:40am

Chairperson: Y. Nakayama, *Tokai University*

#### **Quantitative Visualization Techniques for Aerodynamics**

J. Kompenhans, *DLR's Institute of Aerodynamics and FLOW Technology*

Chairperson: Q.D. Wei, *Peking University*

#### **Visualization in Automobile Engineering**

T. Kobayashi, *Japan Automobile Research Institute*

### Room A

OS8 Visual Information and Analysis

13:00pm-14:30pm

Chairperson: K. Arai, *Saga University*

Co-Chairperson:

#### **3D Bone Axis Analysis Method Using CT Images of the Lower Limbs and Its Evaluation**

ASV11-08-02

A. Doi, T. Takahashi, T. Furukawa

#### **Two-Dimensional Orthogonal Wavelet Analysis of Turbulent Structures in Various Near-wakes**

ASV11-08-03

A. Rinoshika, H. Omori

#### **High-Speed PIV Measurement of Particle Velocity and Concentration in a Horizontal Pneumatic Conveying**

ASV11-08-04

F. Yan, A. Rinoshika

#### **Parallel Volume Rendering over Network for Tiled Display Wall**

ASV11-08-05

H. Miyachi, N. Sakamoto, K. Koyamada, K. Kiyokawa

#### **Visualization of Blurred Images of Liquid by Multi-scale Analysis**

ASV11-08-06

H.N. Miyamura, M. Kureta, M. Segawa, J. Kubo, T. Saito, Y. Suzuki, H. Takemiya

#### **Three-Dimensional Flow Visualization and Segmentation of Characteristics of Turbulence Structure in Sibilant /s/**

ASV11-08-08

K. Oita, H. Shigeta, K. Kiyokawa, K. Nozaki, H. Takemura

OS8 Visual Information and Analysis

14:50pm-16:20pm

Chairperson: A. Rinoshika, *Yamagata University*

Co-Chairperson: H. Miyachi, *Cybernet System Co. Ltd.*

#### **Examination of a Pressure Estimation Method using PIV Measurement Data for Automobile Development**

ASV11-08-09

K. Matsushima, M. Yonezawa, A. Ogawa, H. Motohara

**Image Retrieval Method Based on Hue Information and Wavelet Description Based Shape Information as well as Texture Information of the Objects Extracted with Dyadic Wavelet Transformation**

ASV11-08-10

K. Arai, Y. Yamada

**Data Hiding Method which Robust to Run-Length Data Compression Based on Lifting Dyadic Wavelet Transformation**

ASV11-08-11

K. Arai, Y. Yamada

**Multi-Dimensional Binning for Parallel Coordinates and Application to Large-Scale CFD Results**

ASV11-08-12

T. Tanaka, N. Sakamoto, K. Koyamada

**Displacement Acquisition of a Flattering Plate by using Image Processing**

ASV11-08-13

M. Yamagishi, H. Morimura

**Simulation and Visualization of Microstructure of Human Skin**

ASV11-08-15

M. Kurokawa, T. Itoh, N. Toyoda

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OS8 Visual Information and Analysis

16:30pm-17:45pm

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Chairperson: K. Koyamada, *Kyoto University*

Co-Chairperson: M. Yamagishi, *Nagaoka National College of Technology*

**Fast Detection and Visualization of Protein Surface Pockets for Drug Design**

ASV11-08-16

Y. Nakamura, T. Itoh

**Fluid Flow Characteristics Analysis of the Channel Geometry in X-Shaped Micro-Channels**

ASV11-08-18

S.M. Tu, S. Torii, Y.C. Shih

**Fluctuation of Interface between Immiscible Fluids in the Rotating Cylinders**

ASV11-08-19

Y. Toya, S. Hara, Y. Wada, T. Watanabe

**Visualized Observation of Vortex Shedding form an In-Line Forced Oscillating Triangular Cylinder**

ASV11-08-20

Y. Yokoi, T. Kumamoto, H. Yoshidome, K. Hatayama

**Variation of Time Constant between the Super-Critical and Sub-Critical Taylor-Couette Flow**

ASV11-08-21

T. Watanabe

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**Room B**

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OS99 General Topics of Visualization

13:00pm-14:30pm

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Chairperson: T. Hatakeyama, *Toyama Prefectural University*

Co-Chairperson: Y. Koito, *Kumamoto University*

**Application of Matched Refractive-Index PIV Method to Single-Phase and Two-Phase Flows with Complex Geometry**

ASV11-99-16

K. Yuki, H. Hashizume, K. Suzuki

**Observation of Bubbles on Wetting Surface in Subcooled Pool Boiling**

ASV11-99-21

K. Suzuki, K. Yuki

**Bridging Model of Electrocatalysis and Transport-Reaction Phenomena for Visualizing PEFC Operation**

ASV11-99-28

S. Hasmady, K. Fushinobu, K. Okazaki

**Fundamental Study on Laser Pointer PIV System**

ASV11-99-35

S. Nakagawa, M. Hirose, K. Yamauchi, T. Hatakeyama, M. Ishizuka

**Flow and Heat Transfer around Finned-Heat Sink in Electronic Enclosure with Axial Cooling Fan**

ASV11-99-40

T. Fukue, T. Hatakeyama, M. Ishizuka, S. Nakagawa, K. Koizumi, Y. Funawatashi

**Fundamental Study of a Liquid Flow Control by Pressure in a Rectangular Micro Channel for Electronics Cooling**

ASV11-99-43

T. Hatakeyama, M. Ishizuka, S. Nakagawa, S. Haruwaka, N. Horikawa

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OS9 Bio Fluid and Life Science

14:50pm-15:50pm

Chairperson: T. Yamane, *Advanced Industrial Science and Technology*

Co-Chairperson: T. Yagi, *Waseda University*

**Analysis of Unsteady Aerodynamics on Dragonfly using Computational Fluid Dynamics and the Effect of Flapping Trajectories on it**

ASV11-09-02

A. Ramanathan. S, Prabhu. S, P. Kumar. S, Tamizhvendhan. B, A. Ahmed. R

**Quantitative Visualization of Blood Flow in Hypercholesterolemic Zebrafish Vessels**

ASV11-09-04

E. Seo, E. Yeom, S.J. Lee

**PIV Measurements of Cardiac Outflow in a Hypothermic Chick Embryo**

ASV11-09-05

E. Yeom, K.H. Nam, S.J. Lee

**Visualization of the Main and the Leakage Flow in Magnetically Suspended Centrifugal Blood Pump**

ASV11-09-08

M. Horie, K. Yamamura,

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OS9 Bio Fluid and Life Science

16:00pm-17:00pm

Chairperson: S.J. Lee, *Pohang University of Science & Technology*

Co-Chairperson: M. Horie, *Setsunan University*

**Flow Visualization in Human Nasal Cavity**

ASV11-09-09

A. Asato, S. Hanida, M. Watanabe, F. Mori, K. Kumahata, S. Ishikawa, T. Matsuzawa

**Simultaneous Measurement of Tank-Treading Motion of Red Blood Cell and Surrounding Flow Using Target-Tracking Confocal Micro-PIV**

ASV11-09-10

M. Oishi, K. Utsubo, H. Kinoshita, T. Fujii, M. Oshima

**Experimental Insight into Spatial and Temporal Dynamics of Wall Shear Rate using Elastic Replicas of Human Cerebral Aneurysms with Fluorescent Stereo PIV**

ASV11-09-11

T. Yagi, M. Shinke, S. Takahashi, Y. Tobe, M. Umezu, H. Takao, Y. Murayama

**Flow Visualization for an Rotary Blood Pump, EVAHEART™**

ASV11-09-12

T. Yamane, M. Nishida, D. Sugiyama, H. Kawamura, T. Miyakoshi, K. Yamazaki

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**Room C**

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OS15 Shock Wave and Plasma

13:00pm-14:30pm

Chairperson: S. Leonov, *Joint Institute for High Temperature RAS*

Co-Chairperson: Y. Sakamura, *Toyama Prefectural University*

**Design and Fabrication of Miniature Supersonic Nozzle**

ASV11-15-02

Sandhya T, S. Ahmed, A. Ahmed. R

**A Study on Flow Field with Shock Wave Discharged from a Pipe**

ASV11-15-03

E. Tamura, S. Kitajima, J. Iwamoto

**Visualization of Ablation and Spallation of Icy Object in Hypersonic Flow at Mach Number 7**

ASV11-15-05

K. Suzuki, O. Imamura, T. Okunuki

**Observations of SiC Ablations in Air Plasma Freejets**

ASV11-15-06

M. Funatsu, R. Shibata, M. Ozawa, R. Onozawa, H. Shirai, F. Takakusagi

**Visualization of Granular Flow around Obstacle**

ASV11-15-07

R. Yano, K. Suzuki

**Visualization of Supersonic Mixing Enhanced by Cavity-Induced Flow Oscillation**

ASV11-15-09

T. Handa, T. Yamauchi, J. Fujita, A. Nakano

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OS15 Shock Wave and Plasma

14:50pm-16:05pm

Chairperson: K. Suzuki, *University of Tokyo*

Co-Chairperson: T. Handa, *Kyushu University*

**Studies on Fluid-Plasma Interaction Associated with Gas Blast Characteristics Based on a High-Order LES Turbulence Model**

ASV11-15-10

T. Jimbo, D. Biswas, K. Udagawa, T. Shinkai, K. Suzuki

**Technique of Focusing Schlieren Applied to Measure the Flow Density in Shock Tunnel**

ASV11-15-12

Ai-min Xie, Jie Huang, Xu Xiang, Lü Zhi-guo, Song Qiang, Zheng Lei, Liu Sen

**Visualization of Shock Wave induced by Direct Current Plasma Discharge in Hypersonic Flow over Flat Plate**

ASV11-15-13

Y. Watanabe, K. Suzuki

**Numerical Study of Shock-Induced Entrainment of a Rectangular Solid Body**

ASV11-15-14

Y. Sakamura, S. Uesugi, K. Nakayama

**Thermographic visualization of the spatial distribution of the plasma flow**

ASV11-15-04

Y.A. Kovalenko, T.V. Chernishov, D.N. Novichkov, I.V. Ovcharov, A.N. Yermilov

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OS99 General Topics of Visualization

16:15pm-17:45pm

Chairperson: K. Suzuki, *Tokyo University of Science*

Co-Chairperson:

**Numerical Visualization on Heat Spreading Characteristics of Solid Metal Plates**

ASV11-99-46

Y. Koito, Y. Nonaka, T. Tomimura

**Design and Development of Unmanned Aerial Vehicle – the Phoenix**

ASV11-99-05

Dharmahinder Singh Chand, Jayanth J., Kalidas B., Parthiban J., Saishshriman M.

**A Wind Tunnel Experimental Research on Transition Measurement for a Metallic Airfoil Model with the Infrared Imaging Technique**

ASV11-99-07

Z.H. Geng, X.N. Wang, L. Liang, Y. Zhang

**Visualization of Results in Higher-Order Finite Elements**

ASV11-99-08

G. Nikishkov



**Visualization of Three-Dimensional Structure of Mixed Convection in a Rectangular Channel with a Cavity**

ASV11-99-50

Y. Funawatashi, H. Watanabe, T. Mizukami

**Room D**

OS4 Heat Transfer and Turbulent Flow

13:00pm-14:30pm

Chairperson: C.T. Hsu, *The Hong Kong University of Science and Technology*

Co-Chairperson: M. Muto, *Central Research Institute of Electric Power Industry*

**Thermal Fluid Flow Transport Characteristics in Confined Channels with Two-Dimensional Dual Jet Impingement**

ASV11-04-01

C. Senkal, S. Torii,

**Stereo-PIV Measurement of Turbulent Shear Stress in a Flow Mixer**

ASV11-04-02

C. Shekhar, K.Y. Park, K. Nishino, Y. Yamane, J. Huang

**The Flow Visualization and Detail of Heat Transfer on Surface with a Transverse Perforated Rib**

ASV11-04-03

C. Nuntadusit, P. Panich, M. Wae-Hayee

**Quantitative Visualization of High-Schmidt-Number Scalar Mixing in Grid Turbulence**

ASV11-04-05

H. Suzuki, K. Nagata, Y. Sakai

**Russian Thermal Vision is more than 50 years old**

ASV11-04-07

I.V. Ovcharov

**Effects of the Swirl-Type Mixed Convection and Heat Transfer in Horizontal Rectangular Duct with Heated and Cooled Side Walls**

ASV11-04-09

K. Toriyama, T. Yamauchi,

OS4 Heat Transfer and Turbulent Flow

14:50pm-16:35pm

Chairperson: M. Tsubokura, *Hokkaido University*

Co-Chairperson: Igor V. Ovcharov, *Russian Electrotechnical Institute*

**Three-Dimensional Flow Visualization of Boundary Layer of a Rotating Sphere at around Critical Reynolds Number**

ASV11-04-10

M. Muto, M. Tsubokura, N. Oshima

**A Study on Heat Transfer Characteristics from a Non-Symmetric Impinging Jet in Crossflow**

ASV11-04-11

M. Wae-Hayee, C. Nuntadusit, P. Tekasakul

**Statistical Scale of Hairpin Vortex Packets in the Later Stage of Bypass Transition Induced by Cylinder Wake**

ASV11-04-12

Z.Q. Tang, N. Jiang

**Visualization on Self-ignition and Flame Propagation of Pressurized Hydrogen by Sudden Release through a Tube**

ASV11-04-16

H.J. Lee, S.H. Kim, Y.R. Kim, I.S. Jeung

**Numerical Simulation on Forced Convection in Fin-Tube Heat Exchangers using Dynamic LBM**

ASV11-04-19

S.W. Chiang, K.F. Sin, C.T. Hsu

**PIV Measurement of Thermal Convective Flow above a Cooking Oven (Insight into Turbulence Structure Near a Heat Source)**

ASV11-04-20

Y. Hattori, H. Suto

**Coherent Structures Manipulation by Blowing and Suction from Streamwise Slits**

ASV11-04-21

Z.Y. Xia, N. Jiang, Y. Tian

Chairperson: H. Zhang, *Beihang University*

Co-Chairperson: T. Kawaguchi, *Tokyo Institute of Technology*

**Investigation of Attachment Saddle Point Structure of 3-D Separation in Laminar Juncture Flow using PIV**

ASV11-99-11

H. Zhang, B. Hu, H. Wang, Y. Muhammad, Z.O. Zaw

**Using Visualization Technique in Determining Characteristics of Water Flows Over a Multisteped Rise Part I : Upstream Geometry**

ASV11-99-14

D. Dimitriou, J. Demetriou

**Using Visualization Technique in Determining Characteristics of Water Flows Over a Multisteped Rise Part II : Downstream Geometry**

ASV11-99-15

D. Dimitriou, J. Demetriou

**Visualization of Leaking and Accumulating Hydrogen under a Sensing-Based Ventilation Control in a Partially Open Space**

ASV11-99-17

K. Matsuura, M. Nakano, J. Ishimoto

## June 7

### Room A

Keynote Lecture

9:00am-10:00am

Chairperson: E. Rathakrishnan, *Indian Institute of Technology Kanpur*

**Quantitative Investigations of Instantaneous Flow Behaviors**

ASV11-ke-04

J.J. Miao, J.K. Tu, H. Liu

**Quantitative Visualization of Various Biofluid Flow Phenomena Using X-Ray Micro-imaging Technique**

ASV11-ke-03

S.J. Lee

### Room B

Keynote Lecture

9:00am-10:00am

Chairperson: T.H. Chang, *Korea Institute of Science and Technology Information*

**Laser Based Quantitative Imaging for Micro/Nano-Scale Transport Phenomena**

ASV11-ke-02

K. Hishida

**Soot Formation Characteristics of Diffusion Flames Using Laser-Based Measurements**

ASV11-ke-01

S.H. Chung

### Room A

OS2 Optical Measurement

10:20am-12:05pm

Chairperson: D.H. Doh, *Korea Maritime University*

Co-Chairperson: J. Sakakibara, *University of Tsukuba*

**Experimental and Numerical Study on Exchange Flow in near Field of Buoyant Jet**

ASV11-02-01

T. Maeda, N. Fujisawa, T. Shutoh, T. Yamagata

**Performance of a New Hybrid PTV**

ASV11-02-02

D.H. Doh, G.R. Cho, Y.H. Kim, C.J. Lee, J.E. Choi, M. Takei

**Three-Dimensional Flow Measurement of Rotating Liquid Layer by using Stereoscopic  $\mu$ PTV Technique**

ASV11-02-04

H.J. Lee, K. Shinya, K. Nishino

**Visualization of Boundary Layer Transition by Viscous Oil**

ASV11-02-05

V. Mosharov, V. Radchenko,

**Investigation of Polymer Properties for the Enhancement of TSP Sensitivity**

ASV11-02-06

Y. Egami, Y. Matsuda, H. Yamaguchi, T. Niimi

**Calibration Flow for Three-Dimensional Velocity Field**

ASV11-02-07

Y. Tanaka, Y. Hirano, S. Murata

**Measurement of Three-Dimensional Velocity Field of Buoyant Jet at Low Froude Number Using Time-Resolved Scanning Stereo PIV**

ASV11-02-08

T. Gohno, T. Syutoh, T. Yamagata, N. Fujisawa

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OS14 Turbomachinery

15:20pm-16:35pm

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Chairperson: K. Tanaka, *Kyushu Institute of Technology*

Co-Chairperson: T. Yamaguchi, *Aisin AW Co., Ltd.*

**Application of a High Order LES Model to Predict Transitional Heat Transfer Characteristics over Turbine Vane Surface**

ASV11-14-01

D. Biswas, T. Jimbo

**PIV Investigation of Reynolds Stress-Relaxation-Strain Eddy Viscosity Model for Low-Speed Axial Fan**

ASV11-14-03

Y.X. Jia, N. Jiang

**Secondary Flow Structures in a Centrifugal Pump**

ASV11-14-04

K.W. Cheah, T.S. Lee, S.H. Winoto

**A Study on Suction Performance and Cavitating Behaviour of Helical Inducer with Inlet Asymmetrical Obstacle Plate**

ASV11-14-06

T. Igoshi, Y. Uchinono, K. Ishizaka, S. Watanabe, A. Furukawa, E. Koroitamana

**On the Aspect-Ratio Effect of a Cross-Flow Fan**

ASV11-14-07

S. Nagasaka, Y. Onishi, J. Funaki, K. Hirata

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OS14 Turbomachinery

16:45pm-17:45pm

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Chairperson: S.H. Winoto, *National University of Singapore*

Co-Chairperson: S. Tomimatsu, *DMW Corporation*

**Study on Flow Field inside Jet Fan using Large Eddy Simulation**

ASV11-14-08

S. Tomimatsu, Y. Yamade, Y. Hirokawa, N. Nishikawa

**Field Analysis around a Lockup Clutch inside a Torque Converter**

ASV11-14-10

T. Yamaguchi, S. Yamakawa, S. Ikeda, K. Tanaka

**Three-Dimensional Flow Structure around a Finite Disk Rotating in a Cylindrical Casing**

ASV11-14-12

T. Watanabe, S. Fujisawa

**Numerical Visualization of Cavitating Flows in a Double-Suction Volute Pump**

ASV11-14-13

A. Inoue, T. Sato, K. Tanaka, T. Nagahara, F. Shimizu, M. Fuchiwaki

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**Room B**

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OS3 Multiphase Flow

10:20am-12:05pm

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Chairperson: H.H. Qiu, *The Hong Kong University of Science & Technology*

Co-Chairperson: W. Asvapoositkul, *King Mongkut's University of Technology Thonburi*

**Multifrequency Electrical Impedance Analysis of the Solid-Liquid Two Phase Flow (An Application in Blood Flow Monitoring)**

ASV11-03-01

A. Sapkota, M. Takei, O. Maruyama, R. Kosaka, T. Yamane

**Simultaneous Simulation and Visualization of Multiphase Flow on GPU**

ASV11-03-02

H. Ando, T. Shibuya, K. Toriyama

**Flow Visualization around a Hydrofoil Close to a Free Surface**

ASV11-03-04

I. Kumagai, T. Kushida, K. Oyabu, Y. Tasaka, Y. Murai

**Visualization of Extinguishing Gas Flow Released from Bursting Soap Bubble**

ASV11-03-07

T. Murashita, H. Torikai, A. Ito

**Droplets Analysis of Cooling Tower Spray Nozzle by Photography**

ASV11-03-09

P. Panware, W. Asvapoositkul

**Ultrasound Doppler Visualization of Moving Interfaces in Gas-Liquid Two-Phase System**

ASV11-03-10

Y. Murai, Y. Tasaka, Y. Takeda

**Experimental and Numerical Visualization of Water/Air Two-Phase Flow in an Eductor**

ASV11-03-11

D.Y. Lee, H.D. Kim, Y.G. Kim, W.T. Chung, J.H. Ahn, K.C. Kim

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OS10 Nano and Micro Fluid

15:20pm-16:35pm

Chairperson: Zhanhua Silber-LI, *Chinese Academy of Sciences*

Co-Chairperson: Yasuhiko Sugii, *The University of Tokyo*

**Measurement of Thrust and Observation of Jet for Water Flows through Micro-Orifices**

ASV11-10-01

A. Ushida, T. Hasegawa, H. Uchiyama, T. Narumi

**Flow Visualization of a Valveless Micropump with High Performance**

ASV11-10-02

A.B. Wang, M.C. Hsieh

**Study of Local Microstreaming and Droplet Breakup in Flow-focusing Devices with  $\mu$ PIV**

ASV11-10-04

Y.N. Cheung, H.H. Qiu

**Quantitative Visualization of Dissolved Oxygen Concentration Field in a Microchannel Using PtOEP/PS film**

ASV11-10-05

K.C. Kim, D.H. Song, H.D. Kim

**Development and Applications of a LED Micro-PIV System**

ASV11-10-06

S.Y. Jaw, J.J. Sheen, T.H. Huang, J.H. Chen

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OS10 Nano and Micro Fluid

16:45pm-17:45pm

Chairperson: A.B. Wang, *National Taiwan University*

Co-Chairperson: K.C. Kim, *Pusan National University*

**Viscoelastic Flow in Asymmetric Planar Contraction Geometry -Effect of Contraction Width-**

ASV11-10-07

T. Yamagata, N. Fujisawa, T. Yajima

**Microscale Visualization of Ionic Liquid in Open Channel by Scanning Electron Microscope**

ASV11-10-08

T. Kawaguchi, M. Kondo, I. Satoh, T. Saito

**Experimental Study on Micro Droplet Collider**

ASV11-10-09

Y. Sugii, K. Takahashi, T. Kitamori

**Observation of Vorticity Generation in  
Micro/Nano-Channel Flows Subject to an Electric Field**  
ASV11-10-10  
Zhanhua Silver-Li, Gaopan Kong, Qun Yu, Trevor H.  
Moulden

## Room C

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OS99 General Topics of Visualization  
10:20am-12:05pm

Chairperson: Y. Ohta, *Waseda University*

Co-Chairperson:

**A Study on the Flow Analysis for Straight Blade Vertical  
Axis Wind Turbine by Computational Fluid Dynamics**  
ASV11-99-18  
K. Horiuchi, I. Ushiyama, K. Seki

**Study on Liquid Crystalline Flow Induced by Direct  
Current Electric Field**  
ASV11-99-19  
K. Kodama, T. Tsukiji, S. Nishimura

**Space Humanities – Application of the ALOS Satellite  
Data to Archaeological and Anthropological  
Investigation with 3D Grand Views**  
ASV11-99-20  
F. Nakano, K. Sakata

**Oil and Smoke Flow Visualization Past  
Two-Dimensional Airfoils for an Unmanned Aerial  
Vehicle**  
ASV11-99-23  
L. Velazquez-Araque, J. Nožicka

**Pressure Drop of Pipe Flow in a Manifold Block**  
ASV11-99-27  
O. Abe, T. Tsukiji, T. Hara, K. Yasunaga

**Effect of oil Concentration on Condensing Heat  
Transfer Coefficient of R-134A**  
ASV11-99-29  
Eed A. Abdel-Hadi, Sherif H. Taher, Abdel Hamid M. Torki,  
Samar S. A. Hamad

**Study of Regenerative Braking of Electrical Vehicles**  
ASV11-99-30  
S. Ghania

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OS99 General Topics of Visualization  
15:20pm-16:35pm

Chairperson: Y. Nabeshima, *Akashi National College of  
Technology*  
Co-Chairperson:

**Bipolar and Mult-Terminal HVDC Systems under  
Different Conditions**  
ASV11-99-31  
Abdelsalam. H. Hamza, Samy. M. Ghania, Tamer Elyan

**Control of Stepper Motor Using Microcontroller for  
Computer Numerical Control (CNC) Drilling Machines**  
ASV11-99-32  
Samy. M. Ghania, A. Saber, Raed Obaid

**Static Visualization of Dynamical Plasma Collision**  
ASV11-99-33  
N. Kawamoto, Y. Hatanaka, K. Hasegawa, S. Nakata, S.  
Tanaka, N. Sakamoto, K. Koyamada, M. Osada, K.A.  
Tanaka

**Flight Attitude of a Small Flapping Robot and Its Flight  
Performance**  
ASV11-99-39  
T. Imura, M. Fuchiwaki, K. Tanaka

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OS99 General Topics of Visualization

16:45pm-17:45pm

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Chairperson: S. Tanaka, *Ritsumeikan University*

Co-Chairperson:

**Comparative Evaluation and Performance Prediction of Cooling Tower Drift Eliminator**

ASV11-99-44

C. Kerdsongsaeng, W. Asvapoositkul

**Visualization of Dynamic Slope Failure Line in the Model embankment by High-speed Digital Camera**

ASV11-99-47

Y. Nabeshima, K. Nakata

**Visualization of Snowdrift around Cube by Experiments and Numerical-simulations**

ASV11-99-48

Y. Yamagishi, S. Kimura, S. Kobayashi, H. Morikawa, T. Kojima, S. Sato, T. Sato

**Visualization of Rotating Vortex in a Centrifugal Blower Impeller**

ASV11-99-52

S. Noguchi, D. Tsugita, C.K.P. Kowshik, Y. Ohta

**Room D**

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OS16 Fluid Control and Measurement

10:20am-12:05pm

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Chairperson: V.V. Kozlov, *Institute of Theoretical and Applied Mechanics*

Co-Chairperson: S. Umeda, *Fukuyama University*

**Flow Characteristics of One-Third Sub-Harmonic Lock-on behind a Rotary Oscillating Cylinder at Re 600**

ASV11-16-01

C.T. Chai, W.T. Lu, F.L. Song, C.H. Kuo

**Near-Wake Flow Characteristics of Modified Cylinder with Slit**

ASV11-16-02

F. Bao, J.J. Miao, Z.R. Liu, Z.S. Liang, Q. Yang, Y. Liu

**Three-Dimensional Visualization of Pulsed Rectangular Jet Captured by Scanning-LIF Method**

ASV11-16-04

K. Sugibuchi, S. Iio, Y. Hanedai, T. Ikeda

**Visualization Analysis of Flow in the Dispersion Section of a Headbox in Papermaking Machines**

ASV11-16-05

M. Sumida, S. Suzuki

**Flow Visualization in a Cylindrical Water Supply Tank**

ASV11-16-06

M. Saitou, T. Kiwata, J. Suginuma, S. Kimura, N. Komatsu, K. Nomura

**Computations on High Efficiency Airfoil at Low Reynolds Numbers**

ASV11-16-07

R. Nozawa, Y. Kida, J. Funaki, K. Hirata

**Experimental Study on Displacement Efficiency of Water in a Cylindrical Water Supply Tank**

ASV11-16-08

M. Shimada, M. Honda, T. Akaike, A. Rynearson, R. Sato

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OS16 Fluid Control and Measurement

15:20pm-16:50pm

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Chairperson: S. Iio, *Shinshu University*

Co-Chairperson:

**Visualization of Flip-Flop Flows from Diamond-Shaped Cylinder Bundles with Wall Concavity by Means of PIV**

ASV11-16-09

S. Umeda

**Visualization of Acoustic Excited Atmospheric Plasma Jet**

ASV11-16-10

C. Uchiyama, K. Yanagisawa, S. Iio, N. Ezumi, T. Ikeda

**Experimental Study of Localized Boundary Layer Disturbances at High Free Stream Turbulence Level (Review)**

ASV11-16-11

V.V. Kozlov, M.M. Katasonov, D.S. Sboev

**Analysis on Vortex-Type Air Bearing**

ASV11-16-12

X. Li, K. Minato, Y. Nakamura, S. Iio, K. Kawashima, T. Kagawa

**Grid Dependency of the MI Simulation for an Orifice Flow in a Circular Pipe**

ASV11-16-13

M. Nakao, K. Kawashima, T. Kagawa

**Poster Short Presentation  
Room A**

Short Presentation

13:25pm-14:25pm

Chairperson: T. Oshima, *Niigata University*

**Method for Texture Mapping on Irregular Shaped-Bodies in GIS Oriented Applications**

ASV11-po-02

D.T. Anh, N. Hirata, N. Asada, H. Demura

**Velocity Profiles with Swirling Flow in a Vertical Circular Tube**

ASV11-po-03

T.H. Chang, S.C. Kil, H.D. Deog, S.Y. Kim

**Investigation of Flow Separation inside Micro Devices**

ASV11-po-05

C.Y. Huang, C.M. Lai, C.A. Li, T.M. Liou

**Spatial and Temporal Variation of Turbulence during Oscillatory Flow in Realistic Model Human Airways**

ASV11-po-06

G. Tanaka, A. Hatori, R. Takano

**PIV Measurements of Airflow in the Human Nasal Cavities**

ASV11-po-07

T. Nishizawa, R. Takano, Y. Watanabe, G. Tanaka

**Characteristics of Thermal Flow in Macro Channel Using Venturi Effect**

ASV11-po-08

G. Nakamuta, S. Torii

**Visualization of Mixing of Microalgae and Its Labelling Reagents inside Microdroplets for Oil Content Detection**

ASV11-po-09

Z.M. Chen, C.Y. Huang, H.Y. Wang

**Visualization of Flow in a T- Branch Rectangular Pipe**

ASV11-po-11

K. Mizuta, S. Takahashi, N. Arai

**Dew and Frost Point Measurements of Residual Water in High Pressure Hydrogen Utilizing Visualization and Image Analysis**

ASV11-po-12

K. Ishida, M. Kosaka, M. Monde

**Visualization of Internal Defects in Concrete Structures Using Active Infrared Thermographic Inspection Technique**

ASV11-po-13

K. Kurita, M. Oyado

**Visualization of Electric Potential of Human Body Caused by Walking Motion under Non-Contact Conditions**

ASV11-po-14

K. Kurita



**Brownian Dynamics Simulation on Aggregation of Submicron Particles**

ASV11-po-15

M. Nakamura, D. Tanaka

**Poster Short Presentation  
Room B**

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Short Presentation

13:25pm-14:25pm

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Chairperson: A. Sakurai, *Niigata University*

**Flow Visualization of a Droplet Impact on a Thin Fluid Layer**

ASV11-po-16

K. Iwamoto, N. Ninomiya

**Visualization of Vortices Pattern in the Interval Space between Two Separately Crossed Circular Cylinders**

ASV11-po-18

H. Yamada, R. Mizobe, E. Hayashi, M. Iwamoto

**Visualization of Nano-Scale Transverse Wave in Liquids Studied by Molecular-Dynamics Simulations**

ASV11-po-20

S. Munejiri, F. Shimojo, K. Hoshino

**Flow Visualization of Acoustic Disturbance ahead of Hemisphere Model in Supersonic Flow**

ASV11-po-21

T. Kawamura, T. Mizukaki

**Measurement of Flood in Inaccessible Mountainous River by Imaging Techniques Using River Monitoring Cameras**

ASV11-po-22

T. Deguchi, K. Yamashita, I. Fujita, M. Honda

**Development of a System for Visualizing Indented Characters**

ASV11-po-23

T. Kamitani, M. Ueda, S. Tanaka, A. Ida, M. Sakakibara

**An Experimental Study of the Shapes of Rotor for Horizontal-axis Small Wind Turbines with and without Winglet**

ASV11-po-26

Y. Nishizawa, M. Suzuki, H. Taniguchi, I. Ushiyama

**Visualization of Laminar Necklace Vortices Produced by a Protuberance of Square Plate**

ASV11-po-27

H. Yamada, Y. Nishi, M. Iwamoto

**Numerical Simulation and Visualization of Acoustic Wave Propagation using the CIP Method on GPU**

ASV11-po-28

Y. Suzuki, H. Ando, T. Toriyama

**Experimental Estimation in Characteristics of Swirling Flow Appearing in a Three-Dimensionally connected Dual Elbow Layout by Means of Matched Refractive-Index PIV Measurement**

ASV11-po-30

T. Kubo, H. Yanai, S. Ebara, H. Hashizume

**Visualization of Rotating Stall in Vaneless Diffuser of a Centrifugal Compressor**

ASV11-po-31

S. Ohuchida, M. Unno, T. Kawakubo, H. Tamaki

**Numerical Visualization of Radiative Heat Flux of Dispersed Particles Irradiated by Solar Light**

ASV11-po-33

S. Sakuma, A. Sakurai, K. Matsubara, N. Gokon, T. Kodama

## June 8

### Room A

Keynote Lecture

9:00am-10:00am

Chairperson: C.T. Hsu, *The Hong Kong University of Science and Technology*

**Interaction of Pulse Filamentary Discharge with Heterogeneous Media**

ASV11-ke-08

A. Firsov, Yu. Isaenkov, S. Leonov, M. Shurupov, D. Yarantsev, M. Shneider

**Visualization Studies on the Boundary Layer Bypass Transition and Control**

ASV11-ke-07

C. Pan, J.J. Wang

### Room B

Keynote Lecture

9:00am-10:00am

Chairperson: S.H. Winoto, *National University of Singapore*

**An Innovative Tab for High-Speed Jet Control**

ASV11-ke-06

E. Rathakrishnan

**The Spirit of Jomon People Visualized Vortex before BC2500**

ASV11-ke-05

Y. Nakayama, M. Oki, K. Aoki, S. Ito, Y. Yamagishi

### Room A

OS11 Aeronautics and High Speed Flow

10:20am-12:05pm

Chairperson: A. Xie, *China Aerodynamics R&D center*

Co-Chairperson: In-Seuck Jeung, *Seoul National University*

**Three-Dimensional Flow Visualization of Transverse Injection behind a Backward-Facing Step in Supersonic Flow**

ASV11-11-05

C.H. Kim, I.S. Jeung, B. Choi, T. Kouchi, G. Masuya

**Aerodynamic Performance of a Boundary-Layer Diverter for Supersonic Propulsion System**

ASV11-11-06

H. Miki, Y. Watanabe, M. Kameda

**Time-Resolved PIV Applied to NACA0012 Airfoil in Low-Speed Wind Tunnel**

ASV11-11-07

H. Kato, S. Koike, K. Nakakita, A. Iwasaki

**Experimental and Numerical Studies of Effect of Nozzle Geometry on Supersonic Free Jets**

ASV11-11-09

K. Hatanaka, T. Saito, M. Hirota, Y. Nakamura, Y. Suzuki, T. Koyaguchi

**PSP Measurement of Pressure Distributions on a Cambered Airfoil for Mars Exploration Airplane**

ASV11-11-10

K. Nose, M. Anyoji, S. Ida, D. Numata, H. Nagai, K. Asai

**Three Dimensional Flow Visualization Studies on a Typical Sounding Rocket Model in Supersonic Flow**

ASV11-11-11

G. Kumaravel, R.C. Mehta, E. Rathakrishnan

**Corrugation Geometry Effectiveness for Jet Mixing**

ASV11-11-13

M. Kaushik, E. Rathakrishnan

**Vortex Manipulation for Free Jet Control**

ASV11-11-03

Arun Kumar P, Amit Gautam, Rathakrishnan E

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OS11 Aeronautics and High Speed Flow

13:25pm-14:55pm

Chairperson: T. Mizukaki, *Tokai University*

Co-Chairperson: H. Kato, *JAXA*

**Numerical Simulation of Single and  
Twin Jet Impingement on a Typical Jet Deflector**

ASV11-11-16

Navin Kumar Kessop, Dipankar Das, K. J. Devasia, P.  
Jeyajothiraj

**Numerical Flow Visualization in Overexpanded  
Axisymmetric Nozzle**

ASV11-11-18

G. Natarajan, R.C. Mehta, N. Bose

**Evaluation of Temperature-Sensitive Paint using  
Thermographic Phosphor by Hypersonic Aerodynamic  
Heating**

ASV11-11-19

R. Sawamura, K. Nishigata, H. Nagai, K. Asai

**Visualization Study of Vortical Flow over a Typical  
Wing-Body Model Featuring Double-delta Wing**

ASV11-11-20

B. Sampath Rao, Rajan Kurade, Ritukanchan Dubey,A.E.  
Sivaramakrishnan, V.R. Ganesan

**Reconstruction for 3D Laser Interferometric CT  
(LICT) Measurement of High-Speed Unsteady Flow  
Fields around a Long Cylindrical Rod**

ASV11-11-22

T. Sato, T. Inage, S. Tsuchikura, T. Kimata, M. Ota, K.  
Maeno

**Visualization of Shock-Induced Vortex Breakdown on a  
Delta Wing in Transonic Flow Regime**

ASV11-11-23

T. Makoshi, T. Kashida, S. Kimura, Y. Seya, M. Kameda

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OS11 Aeronautics and High Speed Flow

15:15pm-16:15pm

Chairperson: K. Asai, *Tohoku University*

Co-Chairperson:

**Flow Visualization of Starting Process of a  
Two-Dimensional Truncated Plug Nozzle using Shock  
Tube**

ASV11-11-27

T. Mizukaki, S. Watabe

**PIV Measurements of Vortical Flowfield in Transonic  
Wind Tunnel**

ASV11-11-28

W. Jiang, J. Xiong, S. Cheng

**Eight Sequence Laser Shadowgraph for the  
Visualization of Hypervelocity Impact**

ASV11-11-29

Huang Jie, Song Qiang, Xie Ai-min, Zheng Lei, Luo  
Jin-yang, Liu Sen

**Application of Flow Visualization Techniques in  
Transonic Wind Tunnel**

ASV11-11-30

Xiong Jian, Jiang Wei Min, Zhou Qian

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OS13 Safety Management Technology

16:25pm-17:25pm

Chairperson: S. Hattori, *University of Fukui*

Co-Chairperson: M. Kondo, *Nagoya University*

**Evaluation of Mass Transfer Coefficient behind an  
Orifice in a Swirling Pipe Flow with Orifice Bias**

ASV11-13-01

A. Ito, T. Yamagata, T. Takano, N. Fujisawa

**Experiments on Liquid Droplet Impinging Erosion by High-Speed Spray**

ASV11-13-02

D. Hama, A. Ikarashi, T. Yamagata, T. Takano, N. Fujisawa

**On the Evaluation of Mass Transfer Coefficient behind the Orifice in Pipe Flow**

ASV11-13-03

M. Kondo, Y. Kuroda, R. Kojyo, Y. Tsuji

**Effect of Drop Size on Liquid Impingement Erosion for Safety Management**

ASV11-13-05

S. Hattori, G. Lin

**Room B**

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OS99 General Topics of Visualization

10:20am-12:05pm

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Chairperson: T. Wang, *China Academy of Aerospace Aerodynamics*

Co-Chairperson:

**Improvement of Quantitative Image Measurement of Natural Convection Using Color-Stripes Background Oriented Schlieren (CSBOS) Method**

ASV11-99-53

M.F. Zeb, M. Ota, K. Maeno

**The Study of Heated Diamond-shaped Column in 2-D Airflow**

ASV11-99-55

S. Torii, Z. Lin

**Supersonic Condensation of Ethanol Vapor on the Solid Wall behind Incident and Reflect Shock Wave**

ASV11-99-56

H. Zhu, G. Ogata, H. Okuno, K. Maeno, M. Ota

**Acceleration of Dynamic Discrete Ordinate Method for Viscous Flow Simulation on GPU-Cluster**

ASV11-99-57

K.F. Sin, S.W. Chiang, C.T. Hsu

**At Atmospheric Conditions Related to Film Temperatures 300 K and 600 K the He+SF<sub>6</sub> Mixture is unequivocally the Best Gas-Gas Mixture**

ASV11-99-58

Mohammad Reza Mobinipouya

**Visualization of Vortex Structures Induced by Lateral Jet Flow on a Revolution Body**

ASV11-99-60

Z. Ni, Y. Liu, S. Li

**The Visualization of Three-Dimension Shock Wave Structure in Hypersonic Flow Using Schlieren Photography and Laser Vapor Screen Techniques**

ASV11-99-61

S. Li, K. Wang, Z. Ni, M. Tong

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OS1 Combustion Phenomena and Engine

13:25pm-14:55pm

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Chairperson: T. Ishima, *Gunma University*

Co-Chairperson: Y. Nakamura, *Hokkaido University*

**Effect of Injection Strategies on Flame Length in a 2D Trapped Vortex Combustor**

ASV11-01-01

P.K. Ezhil Kumar, D.P. Mishra

**OH-PLIF Measurement of Edge-Flame Established in Counterflow Field**

ASV11-01-03

W. Nishiwaki, H. Mochizuki, T. Kouchi, K. Takita

**Effect of Compression Ratio on In-cylinder Tumble Flows in an Unfired Internal Combustion**

ASV11-01-04

Murali Krishna. B, J.M. Mallikarjuna

**Comparison between Acoustically-Excited Diffusion  
Flames of Tube and Slit Burners**

ASV11-01-05

M. Suzuki, S. Ikura, W. Masuda

**Cellular Structure of Methane-Air Lean Premixed  
Flames Generated by Intrinsic Instability**

ASV11-01-07

S. Kadowaki, Y. Kuniyoshi

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OS1 Combustion Phenomena and Engine

15:15pm-16:15pm

Chairperson: S. Kadowaki, *Nagaoka University of  
Technology*

Co-Chairperson: S.H. Chung, *KAUST*

**Visualization of Spray Impingement and Measurement  
of Its Adhesion Thickness**

ASV11-01-08

S. Okamoto, H. Kawashima, T. Ishima

**Simultaneous Measurement of Temperature and  
Velocity Field in Flickering Flame Using Combined  
Flame Reaction and PIV**

ASV11-01-09

T. Abe, M. Ohkubo, Y. Nakagawa, T. Yamagata, N.  
Fujisawa

**Diagnostic Technique for Combustion Based on the  
Image of CH\* and Near-IR Emission**

ASV11-01-10

T. Hirasawa, K. Gotanda, Y. Kamata, Y. Nakamura

**Acetone-OH Simultaneous PLIF: A New Strategy to  
Diagnose Ultra-Lean ( $\phi < 0.6$ ) Flames**

ASV11-01-11

Y. Nakamura, Y. Yamada, M. Hirota, T. Saito

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OS99 General Topics of Visualization

16:25pm-17:25pm

Chairperson: H. Shirato, *Kyoto University*

Co-Chairperson:

**Spatial Evolution of Large Scale Structure in  
Supersonic Mixing Layer**

ASV11-99-62

T. Wang, Z. Ni, Y. Sun, X. Zhu

**Investigation of Novel Electrospray Techniques for  
Coating Ceramic Surfaces with Rubber Coagulants**

ASV11-99-63

P. Kaewkamjun, Y. Laoonual, S. Songchon, D. Koolpiruck,  
P. Jornsano

**Image Recording with High-Speed Object Tracking**

ASV11-99-65

J. Sakakibara, J. Kita, N. Osato

**Experimental Insight into Modeling of Cerebral  
Aneurysm Hemodynamics: Comparison between Stereo  
PIV and CFD**

ASV11-99-66

S. Takahashi, T. Yagi, M. Shinke, Y. Tobe, M. Umezu, H.  
Takao, Y. Murayama

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**Room C**

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OS12 Acoustics and Industrial Aerodynamics

10:20am-12:05pm

Chairperson: S. Matsuo, *Saga University*

Co-Chairperson: A. Iida, *Toyohashi University of  
Technology*

**Comparison of Direct and Hybrid Simulations of  
Acoustic Radiation by a Rectangular Cylinder in a  
Uniform Flow**

ASV11-12-02

H. Yokoyama, K. Hagiya, A. Iida

**Control of Supersonic Flow Fields using Local Occurrence of Non-Equilibrium Condensation**

ASV11-12-03

J. Nagao, S. Matsuo, T. Setoguchi, H.D. Kim

**Control of an Asymmetric Flow in a Supersonic Nozzle**

ASV11-12-05

S. Matsuo, T. Setoguchi, T. Hashimoto, S. Tokuda, J. Nagao, H.D. Kim

**Hysteretic Phenomena of Shock Waves with Asymmetric Characteristics in a Supersonic Nozzle**

ASV11-12-06

S. Matsuo, T. Setoguchi, N. Shiomi, H.D. Kim

**Evaluation of Transfer Function of Pressure-Sensitive Paint for Unsteady Flow Measurement**

ASV11-12-07

T. Sugimoto, D. Yorita, D. Numata, H. Nagai, K. Asai

**Evaluation of Unsteady Pressure Field and Detection of Aerodynamic Noise Source from a Square Cylinder Based on PIV Measurement**

ASV11-12-08

Y. Oguma, T. Yamagata, N. Fujisawa, T. Yoda, A. Nashimoto

**Direct Numerical Simulation of Circular Jet Up To  $Re=3000$**

ASV11-07-06

K. Sato, K. Matsubara, A. Sakurai

**Numerical Visualization of Reacting Turbulent Flow in a Sudden-Expansion Reactor**

ASV11-07-10

O. Fukuda, T. Yamaguchi, K. Matsubara, A. Sakurai, Y. Aoki, M. Maki, F. Taguchi

**Visualization of Near-Field Light Scattering by a Nano/Micro Particle Using Finite Difference Time Domain Method**

ASV11-07-11

S. Hanashima, A. Sakurai, K. Matsubara

**Flow Visualization of Turbulent Structure in a Channel with a Single Rib**

ASV11-07-13

T. Miura, K. Matsubara, A. Sakurai

**3-Dimensional Numerical Analysis of Instability of Taylor Flow and Wavy Taylor Flow**

ASV11-07-16

Y. Toya, T. Kuwabara, H. Nakazawa, H. Kakeno, T. Watanabe

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OS7 Scientific Art, Sports Science and Numerical Visualization

13:25pm-14:55pm

Chairperson: K. Matsubara, *Niigata University*

Co-Chairperson:

**Turbulent Structures in a Buoyant Plume Past a Bluff Body**

ASV11-07-01

H. Suto, Y. Hattori

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OS7 Scientific Art, Sports Science and Numerical Visualization

15:15pm-16:15pm

Chairperson: T. Asai, *Tsukuba University*

Co-Chairperson: Y. Toya, *Nagano National College of Technology*

**Color Space Visualization of Impressionist Paintings**

ASV11-07-04

K. Ohmi, P.Q. Huy, Y. Li

**The Optimization of Style Points and Flight Distance in Ski Jumping Flight**

ASV11-07-05

K. Seo, K. Shimoyama

**Numerical Simulation of Snowfall around Driving Car**

ASV11-07-07

T. Kusachi, M. Oki

**About Color Vocabulary in Gingatetsudo no Yoru (Night of Galaxy Railway)**

ASV11-07-08

M. Inami, Y. Saito, K. Horii

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OS7 Scientific Art, Sports Science and Numerical Visualization

16:25pm-17:25pm

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Chairperson: K. Seo, *Yamagata University*

Co-Chairperson:

**Story Flow Visualization of English Literature and Its Movie Exhibition**

ASV11-07-09

M. Yamada, Y. Murai, I. Kumagai

**Flow Visualization around Knuckling Effect Soccer Ball**

ASV11-07-12

S. Hong, C. Chung, T. Asai

**Flow Visualization of Football Subject to Knuckling Effect**

ASV11-07-14

T. Asai, S. Ito, K. Seo, T. Yamagata, T. Yamagata

**Aerodynamic Force Evaluation of Non-Spinning Football by Stereo Image Analysis**

ASV11-07-15

T. Nagasawa, T. Yamagata, N. Fujisawa, T. Asai

**Room D**

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OS99 General Topics of Visualization

10:20am-12:05pm

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Chairperson: T. Kiwata, *Kanazawa University*

Co-Chairperson: Y. Laoonual, *King Mongkut's University of Technology Thonburi*

**Planar Laser Induced Exciplex Fluorescence Imaging for Fuel Liquid and Vapor measurement in Flash-Boiling Sprays**

ASV11-99-67

Y. Zhang, G. Zhang, M. Xu

**Unsteady Flows around a Circular Cylinder with Simultaneous Multipoint Measurements of Pressure**

ASV11-99-68

Y. Takakura, S. Watanabe, M. Takagi

**A Numerical Procedure has Successfully Predicted Accurate Values of Thermodynamic Properties in Seven Cubic Equations of State for New Refrigerants**

ASV11-99-69

O. Mobinipouya

**A Unique Way for Maximizing Free Convection for Use in the Buildings**

ASV11-99-70

N. Mobinipouya

**Flow Around a 2-D Bluff Body with Increasing Wind Velocity in Short Time Duration**

ASV11-99-10

H. Shirato, O. Sasaki, K. Inage

**Real-Time Isosurface Rendering of Smooth Fields**

ASV11-99-37

S. Nakata, S. Aoyama, R. Makino, K. Hasegawa, S. Tanaka

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OS5 Civil and Coastal Engineering

13:25pm-14:55pm

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Chairperson: J.J. Wang, *Beijing University of Aeronautics and Astronautics*

Co-Chairperson: K. Dan, *Akashi National College of Technology*

**Experimental Study on Flow Structures under a Partially Inundated Bridge Deck**

ASV11-05-01

C. Lin, S.C. Hsieh, L.F. Lo, M.J. Gao, R.V. Raikar

**Three-Dimensional Study of the Effect of Aspect Ratio on Oblique Shedding behind a Circular Cylinder**

ASV11-05-02

D. Qin, S.W. Chiang, C.T. Hsu

**Accuracy of Non-Intrusive River Flow Measurement by using Space Time Image Velocimetry**

ASV11-05-05

H. Hara, I. Fujita, A. Yorozyua

**Water-Surface Fluctuation and Its Convection Feature in Rough-Wall Open-Channel Flows**

ASV11-05-06

I. Fujita, Y. Furutani, T. Okanishi

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OS5 Civil and Coastal Engineering

15:15pm-16:15pm

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Chairperson: H.H. Hwang, *National Cheng Kung University*

Co-Chairperson: Y.C. Tai, *National Cheng Kung University*

**Effects of Non-Uniform Cleanness of Water Screens on Pump Intake Flows**

ASV11-05-10

K.S. Hwang, Y.B. Li, H.H. Hwang

**Visualization of Tsunami Generated by Submarine Landslides Using a Trapezoidal Cross Section Model in an Open Channel**

ASV11-05-11

K. Dan, M. Hashimoto, S. Yamamoto

**Experimental and Theoretical Study on Flood Bore**

**Propagation and Mushroom Jet Generation of**

**Dam-Break Flow**

ASV11-05-12

H.H. Hwang, Y.C. Tai, R.Y. Yang, W.Y. Hsu, P.C. Kuo, I.V.

Shugan

**Applicability of High-Speed Liner Computation for Added Mass and Flow Pattern**

ASV11-05-13

T. Tsuji, M. Yashima, H. Shimohara, K. Hirata

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OS5 Civil and Coastal Engineering

16:25pm-17:25pm

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Chairperson: C. Lin, *National Chung Hsing University*

Co-Chairperson: K.S. Hwang, *National Cheng-Kung University*

**Classifications for Vortex Motions Induced by Solitary Waves Propagating Over Different Submerged Structures**

ASV11-05-14

T.C. Ho, H.H. Hwuag, C. Lin, K.S. Hwang

**Interfacial Wave Motion Caused by Wave-Mud Interaction**

ASV11-05-15

W.Y. Hsu, H.H. Hwang, C.M. Liu, R.Y. Yang

**Visualization of City Breathability Based on a CFD Technique: A Case Study for Urban Blocks in Niigata City**

ASV11-05-16

Y. Tominaga

**Observations of Wind Effect on Behavior of Roof Tiles by using High Speed Imaging**

ASV11-05-17

S. Okamoto